

Urinary Calculus Disease MCQ Question Answer

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Question: 1. Which patient is at lowest risk for the development of perinephric hematoma after ESWL?

- Option A. hypertensive patient
- Option B. patient on aspirin withheld 5 days prior to ESWL
- Option C. a stone in a scared poorly functioning kidney
- Option D. ESWL every other day

Question: 2. What is (are) true concerning ESWL?

- Option A. a stone is fragmented when the force of the shockwaves overcomes the tensile strength of the stone
- Option B. fragmentation occurs as a result of compressive and tensile forces, erosion, shearing, spalling, and cavitation
- Option C. the generation of compressive and tensile forces and cavitation are thought to be the most important
- Option D. all of the above

Question: 3. What statement is false concerning the use of desmopressin (DDAVP) in renal colic patients?

- Option A. it causes reduction in the mean intra-ureteral pressure
- Option B. it reduces the pain of acute renal colic
- Option C. it has a direct relaxing effect on the renal pelvis and ureteral musculature
- Option D. it is indicated when stones are ≤ 4 mm in diameter

Question: 4. Why do patients with cystic fibrosis form stones?

- Option A. because urine and body secretions are highly concentrated
- Option B. due to renal leak hypercalciuria
- Option C. as a result of distal renal tubular acidosis type I
- Option D. because of reduced or absent of oxalobacter formigenes colonization

Question: 5. Where do Randall plaques originate from?

- Option A. transitional epithelium lining minor calyces
- Option B. transitional epithelium lining major calyces
- Option C. basement membrane of the loops of Henle
- Option D. papillary tips of polar pyramids

Question: 6. What is true regarding a stone in a urethral diverticulum?

- Option A. is symptomless
- Option B. should undergo a trial of milking out

Option C. diverticulectomy and stone extraction is the treatment of choice

Option D. ESWL is the preferred treatment option

Question: 7. What risk factor(s) promote(s) stone formation?

Option A. dehydration

Option B. metabolic disorders

Option C. congenital anomalies

Option D. all of the above

Question: 8. Which of the following dietary advice is recommended for Ca.oxalate stone formers?

Option A. limit beef, chicken, pork, eggs, fish, shellfish, and other animal proteins

Option B. limit beans, nuts, chocolate, coffee, dark green vegetables, and soda

Option C. limit canned, packaged, and fast foods

Option D. limit milk, cheese, and other dairy products

Question: 9. What is false concerning patient's preparation for PCNL?

Option A. active UTI is an absolute contraindication

Option B. fluoroquinolone is the first choice for antimicrobial prophylaxis

Option C. withholding aspirin for only 10 days is enough

Option D. despite sterile urine, stone fragmentation might release hidden bacterial endotoxins and viable bacteria

Question: 10. ESWL in pediatric patients is characterized by all of the following, EXCEPT:

Option A. often need sedation or anesthesia

Option B. vesico-ureteral reflux must be excluded

Option C. pediatrics have a higher clearance rate of stones when compared to adults

Option D. safety measures must be taken to avoid lung contusions

Question: 11. What is false concerning primary bladder stones?

Option A. commoner in females than in males

Option B. in pediatrics, are of calcium oxalate and/or ammonium urate composition

Option C. caused by bladder outlet obstruction

Option D. might result in bladder cancer

Question: 12. Which statement is false concerning renal stones related to hyperparathyroidism (HPT)?

Option A. renal stones are found in 20% of patients with primary HPT

Option B. acidic arrest promotes crystallisation of calcium phosphate stones related to HPT

Option C. HPT, vitamin D excess, and malignancy could lead to hypercalcemia and hypercalciuria

Option D. only surgery can cure primary HPT

Question: 13. What is the most favorable stone characteristics for laparoscopic and robotic approaches for the treatment of a kidney stone?

- Option A. a stone in the lower calyx with a wide mouth of infundibulum and obtuse lower calyx to ureter angle
- Option B. a stone in an anterior group calyceal diverticulum with thin overlying renal parenchyma
- Option C. 5 mm calcium-containing stone in an intrarenal pelvis and wide UPJ
- Option D. 6 years post anastrophic nephrolithotomy, recurrent mid calyceal stone

Question: 14. What type of urinary diversion carries the highest risk of stone formation?

- Option A. Kock pouch
- Option B. Neobladder-to-urethra diversion
- Option C. Florida pouch
- Option D. Indiana pouch

Question: 15. What is false concerning recurrent stone formation?

- Option A. best treated by total parathyroidectomy
- Option B. first-time stone formers are at a 50% risk for recurrence
- Option C. males have higher recurrence rate than females
- Option D. stone formers produce stones of the same type every time

Question: 16. What could carry the least risk of colon injury during PCNL?

- Option A. subcostal puncture performed during full expiration
- Option B. previous open nephrolithotomy
- Option C. access lateral to the posterior axillary line
- Option D. horseshoe kidney

Question: 17. What is the first-line treatment of kidney stones of a burden greater than 2 cm?

- Option A. ESWL
- Option B. URS
- Option C. PCNL
- Option D. none of the above

Question: 18. What is false concerning staghorn calculus?

- Option A. commonly unilateral
- Option B. commonly due to repeated infections
- Option C. urate stones are the second most common cause of staghorn calculi
- Option D. ESWL monotherapy with ureteral stenting is the ideal treatment

Question: 19. What is the most common organism that might complicate PCNL?

- Option A. Proteus mirabilis
- Option B. E. coli
- Option C. Pseudomonas aeruginosa
- Option D. Staphylococcus epidermidis

Question: 20. What is the Hounsfield density range of uric acid stones?

- Option A. 400 600 HU
- Option B. 600 800 HU
- Option C. 800 1000 HU
- Option D. 1000 1200 HU

Question: 21. Which of the following is a relative contra-indication to ESWL?

- Option A. renal insufficiency
- Option B. active urinary tract infection
- Option C. uncorrected bleeding disorder
- Option D. third trimester pregnancy

Question: 22. What is false concerning urethral stones?

- Option A. stones at posterior urethra could be pushed back to the bladder
- Option B. stones at anterior urethra have to undergo a trial of milking out, using copious intra-urethral xylocaine gel
- Option C. often respond to a two-week course of tamsulosin
- Option D. respond to Holmium laser treatment

Question: 23. What is true concerning the use of intravenous fluids in renal colic cases?

- Option A. patients should be given large amounts of fluids to hasten stones passage
- Option B. fluids are given to keep the patient well hydrated
- Option C. the recommended regimen is 2 L of ringer lactate over 2 hours
- Option D. fluids are contraindicated if desmopressin (DDAVP) was given

Question: 24. What is the treatment of choice for a 15 mm stone in the lower calyx with a narrow infundibulum?

- Option A. ESWL
- Option B. PCNL
- Option C. radial nephrolithotomy
- Option D. pyelolithotomy with ureteral stenting

Question: 25. The process where nucleation and further precipitations occur by different components to form urinary stones, is called:

- Option A. classical nucleation theory
- Option B. heterogeneous nucleation
- Option C. suspension solution
- Option D. concentric lamination

Question: 26. What is the incidence risk of ureteral strictures following ureteroscopy?

- Option A. 3 6 %
- Option B. 12 15 %
- Option C. 0.4 0.8 %
- Option D. 0.09 0.14 %

Question: 27. What is the least serious complications of PCNL?

- Option A. uncontrollable bleeding
- Option B. incomplete removal of stones
- Option C. pneumothorax
- Option D. colonic perforation

Question: 28. When urine reaches a high tendency to form stones, the situation is called:

- Option A. lithogenic anion to cation ratio
- Option B. Randall cut off
- Option C. saturation index
- Option D. solubility product

Question: 29. What is the principal defect in renal hypercalciuria?

- Option A. impaired renal tubular calcium reabsorption
- Option B. excessive glomerular leak of calcium
- Option C. deficiency of the enzyme xanthine oxidase
- Option D. hypercalcemia

Question: 30. What could the discomfort experienced during ESWL session be related to?

- Option A. the energy density of the shock waves as they pass through the skin
- Option B. the size of the focal point
- Option C. a & b
- Option D. none of the above

Answer Sheet

1	C	a scared poorly functioning kidney is less viable and unlikely to bleed. Every other day ESWL encourages existing small hematomas to get bigger and to open into the perinephric space. Aspirin users have to stop the medication preferably 10 days before the procedure.
2	D	self-explanatory.
3	D	indicated in all stone sizes causing renal colic.
4	D	reduced or absent <i>O. formigenes</i> colonization accounts for increasing intestinal oxalate absorption and reduced secretion.
5	C	in idiopathic calcium oxalate stone formers, Randall plaques originate from the basement membrane of the thin loops of Henle.
6	C	typically, the diverticulum mouth is too narrow to milk the stone out, and for the residual fragments post ESWL to drain. Surgical excision of the diverticulum and stone extraction is the preferred option for treatment.
7	A	self-explanatory.
8	B	beans, nuts, chocolate, coffee, dark green vegetables, soda, and others are rich in oxalate.

9	B	cephalosporin is the first choice for antimicrobial prophylaxis.
10	B	vesico-ureteral reflux, by its self, is not a contraindication for ESWL.
11	A	commoner in males at all ages because of the high likelihood of bladder outlet obstruction.
12	B	acidic arrest promotes crystallisation of calcium oxalate and urate stones.
13	B	in a version kidney, stones in the anterior calyceal group diverticuli of any size, are the favorite.
14	A	the Kock pouch has a 4 - 43% incidence of stone formation.
15	A	parathyroidectomy helps treat only calcium-containing stones.
16	B	previous open renal surgery might stick the kidney to the lateral abdominal wall making PCNL, technically, easier with least chances of colonic injury.
17	C	PCNL is first-line therapy for kidney stone burdens 2 cm and greater.
18	D	ESWL alone is never enough to treat staghorn stones.
19	D	self-explanatory.
20	A	self-explanatory.
21	A	stone-free rates in patients with renal insufficiency (57%) (serum creatinine level of 22.9 mg/dL) were significantly lower than in patients with better renal function (66%) (serum creatinine level < 2 mg/dL).
22	C	urethral stones are often obstructing and thus no place for two weeks of respite.
23	B	fluids are given to keep the patient well hydrated especially if he/she was vomiting.
24	B	the clearance rate with stones at the lower calyx with tight infundibulum is best achieved using PCNL.
25	B	The process by which nuclei form in impure solutions is called heterogeneous nucleation. The nucleus and the overlying precipitants are, typically, of different matters.
26	A	3 6 %
27	B	self-explanatory.
28	C	chemically it is best described as saturation index.
29	A	self-explanatory.
30	C	(a) and (b) are correct.